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10/616,051	07/10/2003	Koji Omae	240067US90	9779

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EXAMINER	
MURRAY, DANIEL C	
ART UNIT	**PAPER NUMBER**
2143	

NOTIFICATION DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/616,051	OMAE ET AL.	
	Examiner	Art Unit	
	Daniel Murray	2143	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10JUL2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-16* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *10JUL2003* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *10JUL2003*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Priority

1. Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d). The certified copy has been filed in parent Application No. 10/616051, filed on 10JUL2003.

Information Disclosure Statement

2. The information disclosure statements submitted on 18NOV2003 and 22DEC2004 have been considered by the Examiner and made of record in the application.

3. The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609.04(a) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered.

Drawings

4. The drawings are objected to under 37 CFR 1.83(a) because they fail to show the home agent (HA)(page 9 lines 2 and 13) as described in the specification. Any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP § 608.02(d). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing

should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

5. The disclosure is objected to because of the following informalities:

- Page 78 line 23, replace "pin" with --ping-- before "response".

Appropriate correction is required.

6. The specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

7. The disclosure is objected to because it contains an embedded hyperlink and/or other form of browser-executable code. Applicant is required to delete the embedded hyperlink and/or other form of browser-executable code. See MPEP § 608.01.

8. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Objections

9. The claims are objected to because the lines are crowded too closely together, making reading difficult. Substitute claims with lines one and one-half or double spaced on good quality paper are required. See 37 CFR 1.52(b).

10. **Claims 3, 9, 11, 12, 13, and 15** are objected to because of the following informalities:

a) On **line 11** of **claim 3,** replace --a-- with before "returned" in order to provide proper antecedent basis for "returned response data".

b) On **line 4** of **claim 9,** replace "and" with --or-- before "a node"

c) On **line 4** of **claim 11,** replace "and" with --or-- before "a node"

d) On **line 3** of **claim 12,** replace "a" with --the-- before "node" in order to provide proper antecedent basis for "node storage unit".

e) On **line 3** of **claim 13,** replace "a" with --the-- before "node" in order to provide proper antecedent basis for "node storage unit".

f) On **line 13** of **claim 15,** replace "a" with --the-- before "node" in order to provide proper antecedent basis for "node search packet".

Appropriate correction is required.

Claim Rejections - 35 USC § 101

11. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claim 16 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claim 16 states: A computer program product for causing a computer to function as a node, the computer program product comprising: a first computer program code for causing the computer to store addresses of service nodes for providing a service to a mobile node; a second computer program code for causing the computer to create a node search packet to be transmitted to a stored address, in order to search for the service node; a third computer program code for causing the computer to communicate, transmit the node search packet created, and receive a node notice packet returned from at least one of a search packet reception node, which has received the node search packet, and a peripheral node other than the search packet reception node in response to a transmitted node search packet; a fourth computer program code for causing the computer to detect the service node on a basis of the node notice packet received; and a fifth computer program code for causing the computer to update the addresses on a basis of a detected service node.

Applicant fails to claim a proper computer readable medium and thus fails to fall within in a statutory category and is thus, per se, is considered software. Examiner suggests applicant include a statement referencing the computer software product on a computer readable medium.

Claim Rejections - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

13. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. **1**, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness. .

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

14. **Claims 1-16** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Okanoue (US Patent # 5,179,861)** in view of **Haas (US Patent # US 6,304,556 B1).**

a) Consider **claim 1,** Okanoue clearly shows and discloses, a node search method for searching for a service node for providing a service to a node (column 1 lines 54-63), in a communication system including a plurality of service nodes (figure 1, abstract, column 2 lines 18-24, column 3 lines 40-46) and the node, each of the service nodes and the mobile node having a node storage unit configured to store addresses of service nodes (figure 2, figure 7, column 1 lines 23-24 lines 27-31, column 4 lines 48-50, column 5 lines 56-60), the node search method comprising: transmitting a node search packet for searching for the service node from a search node (abstract, column 1 lines 64-67, column 2 lines 24-26), which searches for the service node, to an address

stored in the node storage unit of the search node (figure 4a, abstract, column 4 lines 48-56, column 5 lines 56-67), returning a node notice packet from at least one of a search packet reception node, which has received the node search packet (abstract, column 2 lines 3-8, lines 29-35), and a peripheral node other than the search packet reception node (abstract, column 1 line 67, column 2 lines 1-5 lines 32-35), to the search node in response to the node search packet, detecting the service node on a basis of a returned node notice packet by the search node (abstract, column 2 lines 5-17, lines 31-35), and updating the node storage unit of the search node on a basis of a detected service node by the search node (figure 7, column 6 lines 13-17 lines 21-32). However, Okanoue does not specifically disclose a mobile communication system or mobile nodes.

Haas shows and discloses two network protocols, which are particularly suitable for self-reconfigurable communications networks, such as ad-hoc networks (mobile communication system)(abstract, column 1 lines 23-25 lines 66-67, column 8 lines 22-24). More particularly, the first protocol is instrumental in efficiently finding routes within a network, while the second protocol can be used to locate users (mobile nodes)(column 1 lines 23-25 lines 66-67, column 8 lines 22-24) in a network with rapidly changing topology.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teachings of Haas into the system of Okanoue for the purpose of mobility management (abstract, column 3 lines 47-51), efficiently finding routes within a network, and locating users in a network with rapidly changing topology (abstract, column1 lines 7-13).

b) Consider **claim 2,** Okanoue clearly shows and discloses, a node comprising: a node storage unit configured to store addresses of service nodes for providing a service to a node (figure 2, figure 7, column 1 lines 23-24 lines 27-31, column 4 lines 48-50, column 5 lines 56-60); a search

packet creation unit configured to create a node search packet to be transmitted to an address stored in the node storage unit, in order to search for the service node (figure 4a, abstract, column 1 lines 64-67, column 2 lines 24-26, column 4 lines 48-56, column 5 lines 56-67); a communication unit configured to communicate, transmit the node search packet created by the search packet creation unit, and receive a node notice packet returned from at least one of a search packet reception node, which has received the node search packet (figure 2, column 4 line 66 column 5 lines 1-2), and a peripheral node other than the search packet reception node in response to a transmitted node search packet (abstract, column 1 line 67, column 2 lines 1-5 lines 32-35); a detection unit configured to detect the service node on a basis of the node notice packet received by the communication unit (abstract, column 2 lines 5-17, lines 31-35); and an update unit configured to update the node storage unit on a basis of the service node detected by the detection unit (figure 7, column 6 lines 13-17 lines 21-32). However, Okanoue does not specifically disclose a mobile node.

Haas shows and discloses two network protocols, which are particularly suitable for self-reconfigurable communications networks, such as ad-hoc networks. More particularly, the first protocol is instrumental in efficiently finding routes within a network, while the second protocol can be used to locate users (mobile nodes)(column 1 lines 23-25 lines 66-67, column 8 lines 22-24) in a network with rapidly changing topology.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teachings of Haas into the system of Okanoue for the purpose of mobility management (abstract, column 3 lines 47-51), efficiently finding routes within a network, and locating users in a network with rapidly changing topology (abstract, column1 lines 7-13).

c) Consider **claim 3,** and **as applied to claim 2 above,** Okanoue as modified by Haas clearly shows and discloses, the node of claim 2, further comprising: a data creation unit configured to create data for investigating node information concerning the service node detected by the detection unit, the data being transmitted to a detected service node (column 6 lines 13-20), wherein the data storage unit stores the node information (figure 2, figure 7, column 1 lines 23-24 lines 27-31, column 4 lines 48-50, column 5 lines 56-67, column 6 lines 13-17 lines 21-32), the communication unit transmits the data created by the data creation unit, and receives response data returned in response to the data by the detected service node (column 1 lines 23-25 lines 66-67, column 8 lines 22-24), and the update unit updates the node storage unit on a basis of a returned response data (figure 7, column 6 lines 13-17 lines 21-32).

d) Consider **claim 4,** and **as applied to claim 2 above,** Okanoue as modified by Haas clearly shows and discloses, the node of claim 2, wherein node information concerning the service node is included in the node notice packet, the node storage unit stores the node information, and the update unit updates the node storage unit on a basis of a returned node notice packet (figure 2, figure 7, column 1 lines 23-24 lines 27-31, column 4 lines 48-50, column 5 lines 56-67, column 6 lines 13-17 lines 21-32).

e) Consider **claim 5,** and **as applied to claim 3 or 4 above,** Okanoue as modified by Haas clearly shows and discloses, the node of claim 3 or 4, wherein the node storage unit stores the addresses of the service nodes and the node information according to a predetermined criterion (figure 2, figure 7, column 1 lines 23-24 lines 27-31, column 4 lines 48-50, column 5 lines 56-60, column 6 lines 13-17 lines 21-32).

f) Consider **claim 6,** and **as applied to claim 4 above,** Okanoue as modified by Haas clearly shows and discloses, the node of claim 4, further comprising: a determination unit configured

to determine inter-node information between the node and the peripheral node according to inter-node information between the node and the search packet reception node and inter-node information between the search packet reception node and the peripheral node on a basis of the node notice packet (column 2 lines 5-16 lines 31-35), wherein the update unit updates the node storage unit on a basis of the inter-node information between the node and the peripheral node determined by the determination unit (figure 7, column 6 lines 13-17 lines 21-32).

g) Consider **claim 7,** and **as applied to claim 2 above,** Okanoue as modified by Haas clearly shows and discloses, the node of claim 2, further comprising: a notice packet creation unit configured to create the node notice packet by accessing the node storage unit (figure 8, column 6 lines 36-58), wherein the communication unit transmits the node notice packet created by the notice packet creation unit (column 1 lines 23-25 lines 66-67, column 8 lines 22-24).

h) Consider **claim 8,** and **as applied to claim 7 above,** Okanoue as modified by Haas clearly shows and discloses, the node of claim 7, wherein the notice packet creation unit creates the node notice packet that is passed through the peripheral node (abstract, column 1 line 67, column 2 lines 1-5 lines 32-35).

i) Consider **claim 9,** and **as applied to claim 7 above,** Okanoue as modified by Haas clearly shows and discloses, the node of claim 7, wherein the notice packet creation unit creates the node notice packet when the communication unit has received at least one of the node search packet, the node notice packet, and a node notice request packet for requesting return of the node notice packet (figure 8, column 6 lines 36-58).

j) Consider **claim 10,** and **as applied to claim 2 above,** Okanoue as modified by Haas clearly shows and discloses, the node of claim 2, further comprising: a request packet creation unit configured to create a node notice request packet for requesting the peripheral node to return the

node notice packet (figure 4a, column 5 lines 18-24, column 6 lines 1-20), wherein the communication unit transmits the node notice request packet created by the request packet creation unit (column 1 lines 23-25 lines 66-67, column 8 lines 22-24).

k) Consider **claim 11,** and **as applied to claim 10 above,** Okanoue as modified by Haas clearly shows and discloses, the node of claim 10, wherein the request packet creation unit creates the node notice request packet when the communication unit has received at least one of the node search packet, the node notice packet, or the node notice request packet (figure 8, column 6 lines 35-58).

l) Consider **claim 12,** and **as applied to claim 2 above,** Okanoue as modified by Haas clearly shows and discloses, the node of claim 2, further comprising: a request packet creation unit configured to create a node registration request packet for requesting registration in a node storage unit of another service node (figure 7, column 6 lines 7-17), wherein the communication unit transmits the node registration request packet created by the request packet creation unit (column 1 lines 23-25 lines 66-67, column 8 lines 22-24).

m) Consider **claim 13,** and **as applied to claim 2 above,** Okanoue as modified by Haas clearly shows and discloses, the node of claim 2, wherein the communication unit receives a node registration request packet for requesting registration in a node storage unit of another service node (column 1 lines 23-25 lines 66-67, column 8 lines 22-24), and the update unit updates the node storage unit on a basis of the node registration request packet (figure 7, column 6 lines 13-17, lines 21-23).

n) Consider **claim 14,** and **as applied to claim 2 above,** Okanoue as modified by Haas clearly shows and discloses, the node of claim 2, However, Okanoue does not specifically disclose a selection criterion holding unit configured to hold a selection criterion for selecting a service node to

be used; and a selection unit configured to access the node storage unit and select the service node to be used, on a basis of the selection criterion held in the selection criterion holding unit.

Haas shows and discloses a selection criterion holding unit (memory) configured to hold a selection criterion for selecting a service node to be used (node location and route information); and a selection unit (processor) configured to access the node storage unit and select the service node to be used, on a basis of the selection criterion held in the selection criterion holding unit (column 6 lines 58-65).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teachings of Haas into the system of Okanoue for the purpose of efficiently finding routes within a network, and locating users in a network with rapidly changing topology (abstract, column1 lines 7-13).

o) Consider **claim 15 and 16,** Okanoue clearly shows and discloses, a communication system comprising: a search node configured to search for a service node for providing a service to a node by transmitting a node search packet in order to search for the service node (abstract, column 1 lines 64-67, column 2 lines 24-26); a search packet reception node configured to receive the node search packet transmitted from the search node (figure 2, column 4 line 66 column 5 lines 1-2); and a peripheral node other than the search packet reception node (abstract, column 1 line 67, column 2 lines 1-5 lines 32-35), wherein the search node comprises: a node storage unit configured to store addresses of service nodes (figure 2, figure 7, column 1 lines 23-24 lines 27-31, column 4 lines 48-50, column 5 lines 56-60); a search packet creation unit configured to create a node search packet to be transmitted to an address stored in the node storage unit (figure 4a, abstract, column 1 lines 64-67, column 2 lines 24-26, column 4 lines 48-56, column 5 lines 56-67); a communication unit configured to communicate, transmit the node search packet created by the search packet creation unit, and

receive a node notice packet returned from at least one of the search packet reception node (figure 2, column 4 line 66 column 5 lines 1-2) and the peripheral node in response to a transmitted node search packet (abstract, column 1 line 67, column 2 lines 1-5 lines 32-35); a detection unit configured to detect the service node on a basis of the node notice packet received by the communication unit (abstract, column 2 lines 5-17, lines 31-35); and an update unit configured to update the node storage unit on a basis of the service node detected by the detection unit (figure 7, column 6 lines 13-17 lines 21-32). However, Okanoue does not specifically disclose a mobile communication system or mobile nodes.

Haas shows and discloses two network protocols, which are particularly suitable for self-reconfigurable communications networks, such as ad-hoc networks (mobile communication system)(abstract, column 1 lines 23-25 lines 66-67, column 8 lines 22-24). More particularly, the first protocol is instrumental in efficiently finding routes within a network, while the second protocol can be used to locate users (mobile nodes)(column 1 lines 23-25 lines 66-67, column 8 lines 22-24) in a network with rapidly changing topology.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teachings of Haas into the system of Okanoue for the purpose of mobility management (abstract, column 3 lines 47-51), efficiently finding routes within a network, and locating users in a network with rapidly changing topology (abstract, column1 lines 7-13).

Conclusion

15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Hasegawa et al. (US Patent # 5,065,399) disclose: "Telecommunication Network Trouble Recovery System"
- Kasano, Toshihiko (US Patent # 5,173,689) discloses: "Self-Distributed Logical Channel Node Failure Resorting System"
- Matthew, Wallace (US Patent # 5,521,910) discloses: "Method for Determining a Best Path Between Two Nodes"
- Nishimura et al. (US Patent # 5,235,599) disclose: "Self-Healing Network with Distributed Failure Restoration Capabilities"
- Zaumen et al. (US patent # 6,118,760) disclose: "Management of Entries in a Network Element Forwarding Memory"

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel Murray whose telephone number is (571)-270-1773. The examiner can normally be reached on Monday - Friday 0800-1700 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wiley can be reached on (571)-272-3923. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DCM

DAVID WILEY
SUPERVISORY PATENT EXAMINER
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